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The XXIV International Grassland Congress / XI International Rangeland Congress (Sustainable Use of Grassland and Rangeland Resources for Improved Livelihoods) takes place virtually from October 25 through October 29, 2021.

Proceedings edited by the National Organizing Committee of 2021 IGC/IRC Congress

Published by the Kenya Agricultural and Livestock Research Organization

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An Analysis of Community-based Values Informing Land Management on the Midwestern Prairie Band Potawatomi Nation of Kansas, USA

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Key words: community values; tribal land management; grassland ecosystem services; native land cover

Abstract

The focus of this study is to examine the interface between land management practices and values within a tribal community in rural midwestern North America. The Prairie Band Potawatomi Nation (PBPN) reside on a tribal reservation with a checkerboard distribution amongst private, non-tribal landowners. Previous studies have indicated that landowners may have different value-systems leading to variations in land-management practices. This can impose discontinuous land management in areas within shared biological boundaries, such as watersheds, especially between tribal and non-tribal entities. Preliminary spatial analysis in and around the PBPN landscape determined that the tribally-managed lands present more vegetative cover per unit land tenure than non-tribal lands. Furthermore, tribally-managed lands have more miles of intact riparian buffers present along streambanks compared to non-tribal streambanks. These factors indicate a difference in management approaches between both groups, yet the values that drive these management approaches have not been examined. To better understand PBPN land-management approaches, we coded and analyzed surveys conducted with tribal members about stream use, management, and values (n=76). Furthermore, we coded and analyzed every issue of the community newsletter *Rez Recycler* published within 2008-2014 for values-based themes. Our analysis demonstrated the PBPN community prioritize native land cover and ecosystem services for community benefit. Primary themes include stream condition, fish and fishing, culture and community, riparian knowledge, restoration and education. Additionally, healthy streams and healthy aquatic populations were most valued. This demonstrates tribal awareness and prioritization of the connection between land management and stream conditions. We have presented an examination of community values, and desired outcomes, in a way that can help multiple stakeholders (e.g. Federal, state, private and tribal) approach land management. This type of understanding can facilitate collaborative planning that allows the tribal community to define their own version of success and support self-determination and sovereignty.

Introduction

Land management practices can vary across stakeholders over a range of economic and social valuation systems (de Vries & Voß, 2018). A previous study (Mehl et al., 2018) determined land use and land cover (LULC) patterns on tribally-managed lands retained more native vegetative cover (hardwood forest, grassland) than adjacent non-tribally managed lands. Specifically, tribally-managed lands had more miles of intact riparian buffers along streambanks, compared with non-tribal lands. These results indicate that there are different drivers influencing land management practices, however it is unknown whether economic, social, cultural, or some combination of these factors contributed to such practices. The purpose of this study is to examine which valuation systems exist for tribally-managed lands within the Prairie Band Potawatomi Nation (PBPN) and determine whether they may help explain differences in land management preferences. We hypothesized that tribal members would value native land cover (forests and grasslands) and ecosystem services supported by native land cover (healthy streams, fish) over individual economic benefits (eg. cash crops). Questionnaires of tribal members, combined with analysis of tribal newsletters, provide evidence to support this hypothesis.

Study Area - The Prairie Band Potawatomi Nation

The Prairie Band Potawatomi Nation (PBPN) were originally part of a larger tribe that included the Potawatomis, Odawas and Ojibwas (known as the “three fires”), and were quite successful in the Great Lakes region both as hunters and fishers, and later as traders with settler communities (Mitchell, 2009). Following passage of the Indian Removal Act by President Andrew Jackson in 1830, they endured a forced removal and brutal relocation, eventually ending up in present-day Kansas in 1846 (Cave, 2003). Their original reservation territory covered 576,000 acres that extended to the Kansas River and included part of present-day Topeka ("Prairie Potawatomi Resistance to Allotment," 1976). Almost immediately, this territory began to fall subject to the same provisions discussed above and much of the land was lost, piece by

piece, to squatters, railroad interests, and religious interests (Royster & Blumm, 2002; "Prairie Potawatomi Resistance to Allotment," 1976).

Although the federal government during this time was pressuring the Potawatomi and other Indigenous nations to take individual land allotments, the group who would become the Prairie Band of the Potawatomi Nation refused, citing a belief that land belongs to everyone and cannot be owned individually (Mitchell, 2009). They remained on their communally-held land base, which by this time had been reduced to 77,357 acres ("Prairie Potawatomi Resistance to Allotment," 1976). Despite continued resistance and skillful use of non-violent protest and legal tactics, passage of the Dawes Act in 1887 provided an avenue for the U.S. government to force them to take the individual allotments. By 1895 their remaining reservation territory had been divided into 80-160 acre parcels and allotted to each head of household ("Prairie Potawatomi Resistance to Allotment," 1976). Many of these allotment parcels met the same fate as many others across the United States, reduced through taxation, fractionation, and the escheat provision. The end result is the checkerboard pattern of land tenure seen today (Shoemaker, 2003).

The PBPN reservation today covers an area of 121 mi² (77,880 acres), about 20 miles north of Topeka, in Jackson County in northeastern Kansas. The reservation is almost entirely within the Soldier Creek watershed, with the major creeks being Soldier Creek and Little Soldier Creek. Soldier Creek flows from Nemaha County in northeastern Kansas, across the length of the PBPN reservation in Jackson County, and south to Topeka in Shawnee County where it converges with the Kansas River. The Soldier Creek watershed includes approximately 339 mi² (216,898 acres) of land. Land use in the watershed is primarily grassland (63 percent) and agricultural land (30 percent) (Kansas Applied Remote Sensing Program, 1993). Soldier Creek and Little Soldier Creek are affected by water quality problems common to surface water in the Great Plains agricultural region, including elevated levels of sediment, nutrients, bacteria, and pesticides (Ross Schmidt et al., 2007). Soldier Creek and its tributaries have experienced significant degradation related to channel incision from channelization and agricultural land use (Juracek, 2002).

Despite enduring forced relocation and the loss and fractionation of their reservation territory, the PBPN have shown incredible resilience and have built the governance structures necessary to extend their agency and apply land management preferences for cultural resilience and survival. They have many tracts of recently purchased land, which will now fall under their jurisdiction for land management. PBPN land use preferences include traditional subsistence practices, such as hunting and fishing (*personal communication*). This may lead to very different land management decisions than those being made on adjacent privately-owned land parcels.

Methods

A questionnaire was developed and distributed to community members on the Prairie Band Potawatomi Nation (Jackson County, Kansas). The questionnaire was designed to determine what features are valued by participants on local landscapes, how they use local streams, and what environmental issues they perceive to be affecting them. Questions were multiple choice, but also provided space to write qualitative responses or elaborate on the multiple-choice selection. Questionnaires were distributed at two large community events, two smaller workshops (one of which was organized by co-author Mehl), and individually as the author made contacts within the community. The majority of respondents reported being a member of the Prairie Band Potawatomi Nation, Kickapoo Nation in Kansas, or another tribe. Questionnaire responses were coded and analyzed. For the purposes of this analysis, only responses from tribally-affiliated respondents were included (n=76).

To supplement the questionnaire results, a context analysis using qualitative coding (Saldaña, 2015) was performed on issues of the "Rez Recycler" newsletter (available at <https://www.pbpindiantribe.com/pep/rez-recyclers/>). Newsletter issues are published quarterly (approximately four issues per year) by the PBPN Planning and Environmental Protection department and contain articles about community events and environmental sustainability. Each issue published between 2008-2014, for a total sample size of 28 newsletters, was analyzed initially for emergent themes through open coding. Conceptual themes were developed during the second round of axial coding. Concepts and categories created through the coding process were analyzed in Google Fusion Tables which served as the platform for code organization, filtering, and condensing. After code condensing, 19 major code categories emerged with corresponding frequencies as aided by the Fusion Table. This information allowed the determination of major themes highlighted in the newsletters. These codes were compared to the questionnaire that was distributed to tribal members. The questionnaire was also organized and filtered using Google Fusion Tables allowing us to derive the frequency of patterns in the responses for the participants. Newsletter codes and questionnaire responses were synthesized to give five major themes for analysis.

Results

The objective of this study is to better understand cultural drivers of land management choices for an Indigenous communities. Given previous observations that land under tribal tenure was much more likely to retain native vegetation, the authors hypothesized that respondents would value native land cover (forests and grasslands) and ecosystem services supported by native land cover (healthy streams, fish) over individual economic benefits. Results from both the questionnaires and the newsletter analysis supported this hypothesis. Recurring themes include the value of streams as a fishing resource, and the use of streams and stream water for cultural purposes. Riparian forests were seen as important almost without exception.

Analyzing the questionnaire responses, the most frequently mentioned theme regarding streams was fish or fishing. A majority of questionnaire respondents (78%) indicated that they value the streams as a fishing resource. Other major themes mentioned are swimming/recreation (60%), drinking water (55%), and cultural uses (51%). Wildlife habitat was identified as an important issue by 45% of respondents, with 40% of total respondents specifically mentioning habitat for culturally-important plants and animals. Bank stabilization or erosion was mentioned as a concern by 43% of respondents. Only 13% of questionnaire respondents associated with a tribe indicated using streams for irrigation or livestock watering.

The “Rez Recycler” newsletter, published by the PBPB Department of Planning and Environmental Protection, had a number of overarching themes

<u>Community Education</u>	<u>Community events</u>	<u>Environmental assessments</u>	<u>Community Recognition</u>
Sharing community resources (who to call, available resources)	Youth education (Boys & Girls Club)	Air quality updates	Environmental heroes
Department activities (monitoring, surveying, grants)	Community hiking events	Water quality and water conservation	Earth day participant recognition for doing good in the community
Recycling and hazardous waste removal	Earth day celebrations		
Community education of local environmental issues			

In addition, various attitudes and values were either implicitly or explicitly stated in the newsletter, including:

- Keeping reservation clean and litter free (aesthetics)
- Concern for human and environmental health
- Think of those “downstream”
- Do your part - ways you can help
- Elder knowledge and storytelling
- Community wellbeing and bonding

A synthesis of recurring codes between questionnaire responses and the newsletters resulted in the following overarching themes for analysis: stream condition, fish and fishing, culture and community, riparian knowledge, and restoration and education.

Discussion

This study examined whether observed differences between tribal and non-tribal land management (in Mehl et al., 2018) are reflective of specific cultural priorities applied to the landscape by the tribe. The primary themes to emerge from this analysis (stream condition, fish and fishing, culture and community, riparian knowledge, and restoration and education) reinforced the cultural importance of healthy streams and aquatic populations, and showed that the majority of surveyed tribal members are aware of the connection between land management and stream condition. The analysis also highlights the effectiveness of the PBPB Department of Planning and Environmental Protection (the “tribal EPA”) in educating the community, restoring important landscape features such as wetlands, and providing resources for community members.

The results of this study are also important when combined with observations from the land cover analysis by Mehl et al. (2018). This shows that where the PBPB has agency in governance, they manage their land in ways linked to tradition and cultural resilience. On a broader scale, this shows that, where a tribe has agency in governance, cultural landscape management can persist, even when a tribe has been moved from their historical homelands and into a new geography. We must use caution to separate areas where tribes have

agency to apply cultural preferences, from areas where tribes historically lacked agency. In latter areas, land cover patterns may be a result of a lack of economic opportunity, or the result of tribal members being assigned the most marginal lands under the Allotment Act. However, the results of this study show that cultural preferences do exist and are being translated onto the landscape on tribally-owned lands.

This study also furthers the understanding of PBPN community concerns and desired outcomes for federal and state agencies and adjacent private landowners. Most available literature on Indigenous Land Ethics only provides an overarching worldview or examination of TEK (Pierotti, 2011). We have presented a more in-depth examination of community values, in a way that can help federal and state agencies and other natural resource managers close the gap between their own priorities and the priorities and value of the PBPN. This type of understanding can facilitate collaborative planning that allows the tribal community to define their own version of success and support self-determination and sovereignty.

Acknowledgements

The authors are deeply grateful to the Prairie Band Potawatomi Department of Planning and Environmental Protection for their partnership. We also thank the USEPA for funding this research through the STAR Fellowship program.

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